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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/994,447	12/19/1997	KAZUMI SUGA	35C12464	6639

5514 7590 07/30/2003

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EXAMINER
SRIVASTAVA, VIVEK

ART UNIT	PAPER NUMBER
2611	15

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/994,447	BUSH, STEPHEN FRANCIS	
	Examiner	Art Unit	
	Vivek Srivastava	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

Applicant argues Kesatoshi does not teach or suggest controlling whether a display device simultaneously drives a plurality of lines thereof or not, in accordance with detected moving changes between pictures of the image signal, a selected image signal interpolation mode or the kind of image signal input.

The Examiner respectfully submits that Kesatoshi discloses the amended limitation. Please see rejection below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9-18, 20 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Kesatoshi.

Considering claims 9, 13, 20 and 21 Kesatoshi discloses an input means for inputting an image signal (fig 11, Vpc Stv1, Stv2 meets "input image signal" limitation), wherein the "Vpc" is a computer signal generated from a computer and "Stv1" and "Stv2" are television generated signals) wherein the signals are input to video selection unit 200. Kesatoshi discloses a resolution determination unit (see item 28 in fig 11) for determining the resolution if the input signal, the resolution determination unit meets the "judgment unit" limitation. The resolution must be measured or judged to determine how much interpolation is needed to match the resolution of the input image signal to that of the display device. Regarding the claimed "selection unit", Kesatoshi discloses a video signal selection unit 200 (see fig 11) arranged to select between input signals STV1, STV2 and VPC (see col 8 line 63 - col 9 line 5) wherein the claimed "first image signal interpolation mode" is met by scaling or interpolating the STV1 and STV2 input signal and "second image interpolation mode" is met by scaling or interpolating VPC input signal (see col 3 lines 57-62, col 8 line 63 – col 9 line 22). Note: since VPC input signal and STV1/STV2 require differing amounts of interpolation and scaling, Kesatoshi discloses differing "interpolation methods" for VPC and STV1/STV2. Further, in Kesatoshi a means must inherently be included to detect the change in input signals to match the input image resolution to that of the display, wherein the claimed 'interpolation means' is met by the scaling means (col 1 lines 41 - 50, col 2 lines 5 - 29). Kesatoshi further discloses controlling display by driving the number of lines in accordance with if interpolation is needed or not. After detection, if the input signal resolution matches that of the display, a plurality of lines are not simultaneously driven

since no interpolation is required. If interpolation is required, then the display device simultaneously drives a plurality of lines required to match the input resolution to that of the display (see col 9 lines 5-22, col 8 lines 40-67).

Considering claim 10, Kesatoshi discloses displaying signal with various resolutions on a monitor by adjusting the resolution of the input resolution or mode to that of the display. Further, Kesatoshi discloses, a video scalar can change the resolution of a video image to a desired resolution of the display device (col 9 lines 15-20), this would include matching the horizontal resolution of the input signal to that of the display. In particular, Kesatoshi discloses matching the horizontal and vertical resolution (see '640 dots' by '400' lines in col 3 lines 55-60) of a VPC (second interpolation mode) signal to that of the display (see '800 dots' by '600 lines' in col 3 lines 55-60). Further, Kesatoshi discloses the resolution (including horizontal) of the STV1 and STV2 (first interpolation mode) input signals can be interpolated in match that of the display (col 8 line 40 – col 9 line 22).

Considering claim 11, Kesatoshi discloses the claimed wherein the judgment unit judges a resolution in accordance with a sync signal contained in the image signal (col 1 lines 57-65).

Considering claim 12, see claim 8 or (col 4 lines 8-67, col 5 lines 27-35).

Considering claim 14, Kesatoshi discloses interpolating the vertical and horizontal resolutions of the input image signal to match the display (col 6 lines 20-22). Kesatoshi also discloses scaling or interpolating the input television signal (STV1, STV2) to match the resolution of the display (col 8 lines 40 - col 9 line 22). Matching the

television resolution to the resolution of the display would include a horizontal resolution, thus Kesatoshi discloses the claimed "interpolation unit interpolates the television image signal to have the a horizontal resolution same as the resolution of the display device". Further, Kesatoshi discloses interpolating the vertical resolution (640 dots) and horizontal resolution (600 lines) of an input computer signal to that of the display (800 dots by 600 lines) if a VPC (computer signal) is selected and detected (col 8 line 63 - col 9 line 22).

Considering claim 15, Kesatoshi discloses changing the input resolution as desired to match that of the display and thus discloses the claimed wherein saind control unit controls the display device so as to drive the plurality of lines thererof at the same time when the television signal is input.

Considering claim 16, see claim 11.

Considering claim 17, Kesatoshi discloses the claimed wherein the judgment unit judges resolution by measuring horizontal and vertical sync signals contained in the image signal (col 4 lines 8 – 67, col 5 lines 27-35).

Considering claim 18, Kesatoshi discloses converting the image signal of the television (STV1, STV2, see fig 11) format from a field unit signal into a frame unit signal (col 8 line 54 - col 9 line 22) by digitizing the signal (see 'ADC 32' in fig 11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kesatoshi.

Considering claims 1 and 19, Kesatoshi discloses an input means for inputting an image signal (fig 11, Vpc Stv1, Stv2 meets "input image signal" limitation) , wherein the "Vpc" is a computer signal generated from a computer and "Stv1" and "Stv2" are television generated signals, wherein the signals are input to video selection unit 200. Kesatoshi discloses a resolution determination unit (see item 28 in fig 11) for determining the resolution if the input signal, the resolution determination unit meets the "judgment unit" limitation. The resolution must be measured or judged to determine how much interpolation is needed to match the resolution of the input image signal to that of the display device. Further, Kesatoshi discloses a detection unit arranged to detect a change between pictures', when a user selects between input signals STV1, STV2 and VPC (see col 8 line 63 - col 9 line 5), a means must inherently be included to detect the change in input signals to match the input image resolution to that of the display and the claimed 'interpolation means' is met by the scaling means (col 1 lines 41 - 50, col 2 lines 5 - 29). Kesatoshi further discloses controlling display by driving the number of lines in accordance with if interpolation is needed or not. After detection, if the input signal resolution matches that of the display, a plurality of lines are not

simultaneously driven since no interpolation is required. If interpolation is required, then the display device simultaneously drives a plurality of lines required to match the input resolution to that of the display (see col 9 lines 5-22, col 8 lines 40-67).

Kesatoshi discloses detecting a change in the input resolution of the input signal by measuring the frequency of the input signal but fails to disclose the claimed detecting a change in the input resolution of the input signal by detecting a moving change between pictures of the image signal. The Examiner takes Official Notice it would have been well known in the art that a means for detecting the level of resolution would have been to detect a change in movement between pictures or to correlate the amount of movement in an image having been larger than a predetermined value. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kesatoshi to include the claimed detecting a moving change between pictures to provide a well known quick means for detecting the level of resolution by detecting changes in movement between pictures being larger than a predetermined value to determine if interpolation is required to enable displaying of the input signal on the display by matching the input resolution to the resolution of the display (See Fernando 4,985,765 and Nakagawa 5,805,222 for Official Notice support).

Considering claim 2, Kesatoshi discloses the claimed computer signal and television signal (see col 3 lines 1 - 29, col 8 line 54 - col 9 line 22, col 3 lines 52-67).

Considering claim 3, Kesatoshi discloses converting the image signal of the television (STV1, STV2, see fig 11) format from a field unit signal into a frame unit signal (col 8 line 54 - col 9 line 22) by digitizing the signal (see 'ADC 32' in fig 11).

Considering claim 4, Kesatoshi discloses interpolating the horizontal resolution (see col 3 line 53 - col 4 line 38, col 8 lines 15-25, col 8 lines 40-52) which meets the limitation of interpolating the image signal to have a horizontal resolution same as the horizontal resolution of a display device, if said detection means detects that the change in the image signal is large. This broad limitation is met since Kesatoshi discloses detecting changes (which include large changes) in the input horizontal resolution to match the horizontal resolution of the display device. Further, the claimed "and in other cases, interpolates the image signal to have a horizontal and vertical resolution same as the horizontal and vertical resolutions of the display" is met by interpolating a vertical resolution of 400 lines and horizontal resolution of 640 dots to a vertical resolution of 600 lines and horizontal resolution of 800 dots (see col 3 lines 55 - 60).

Considering claim 5, Kesatoshi discloses down-converting and contracting and up-converting the resolution of the input image (col 9 lines 6 - 22, col 1 lines 39 - 50 and col 3 lines 52 - 60) which meets the claimed limitation.

Considering claim 6, since Kesatoshi discloses controlling the display device to drive the plurality of lines at the same time and since it would have been obvious (claim 1) to detect the moving change between the pictures of the image signals is larger than a predetermined resolution, it would have been obvious to modify Kesatoshi to include the claimed limitation.

Considering claim 7, Kesatoshi discloses the claimed wherein the judgment unit judges a resolution in accordance with a sync signal contained in the image signal (col 1 lines 57-65).

Considering claim 8, Kesatoshi discloses the claimed wherein the judgment unit judges resolution by measuring horizontal and vertical sync signals contained in the image signal (col 4 lines 8 – 67, col 5 lines 27-35).

Conclusion

I. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sekine et al (5,754,710) - Image résolution conversion

Silverberg (4,670,773) - Increasing television resolution

Welman et al (5,103,306) - Digital image compression employing a resolution gradient

Any response to this action should be mailed to:

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or faxed to:

(703) 872-9314, (for formal communications intended for entry)

Or:

(703) 308- 5399 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivek Srivastava whose telephone number is (703) 305 - 4038. The examiner can normally be reached on Monday - Thursday from 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andy Faile, can be reached at (703) 305 - 4380.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703) 305 - 3900.

VS

7/21/03

VIVEK SRIVASTAVA
PRIMARY EXAMINER